ABSTRACT OF THE DISCLOSURE

A memory management unit (MMU) is disclosed for managing a memory storing data arranged within a multiple memory pages. The memory management unit includes a security check receiving a physical address within a selected memory page, and security attributes of the selected memory page. The security check unit uses the physical address to access one or more security attribute data structures located in the memory to obtain an additional security attribute of the selected memory page. The security check unit generates a fault signal dependent upon the security attributes of selected memory page and the additional security attribute of the selected memory page. The security attributes of the selected memory page may include a user/supervisor (U/S) bit and a read/write (R/W) bit as defined by the x86 processor architecture. The one or more security attribute data structures may include a security attribute table directory and one or more security attribute tables. The security attribute table directory may include multiple entries, and each entry of the security attribute table directory may include a present bit and a security attribute table base address field. A central processing unit (CPU) is described including the memory management unit (MMU), and a computer system is disclosed including the CPU. A method is described for providing access security for a memory used to store data arranged within multiple memory pages.